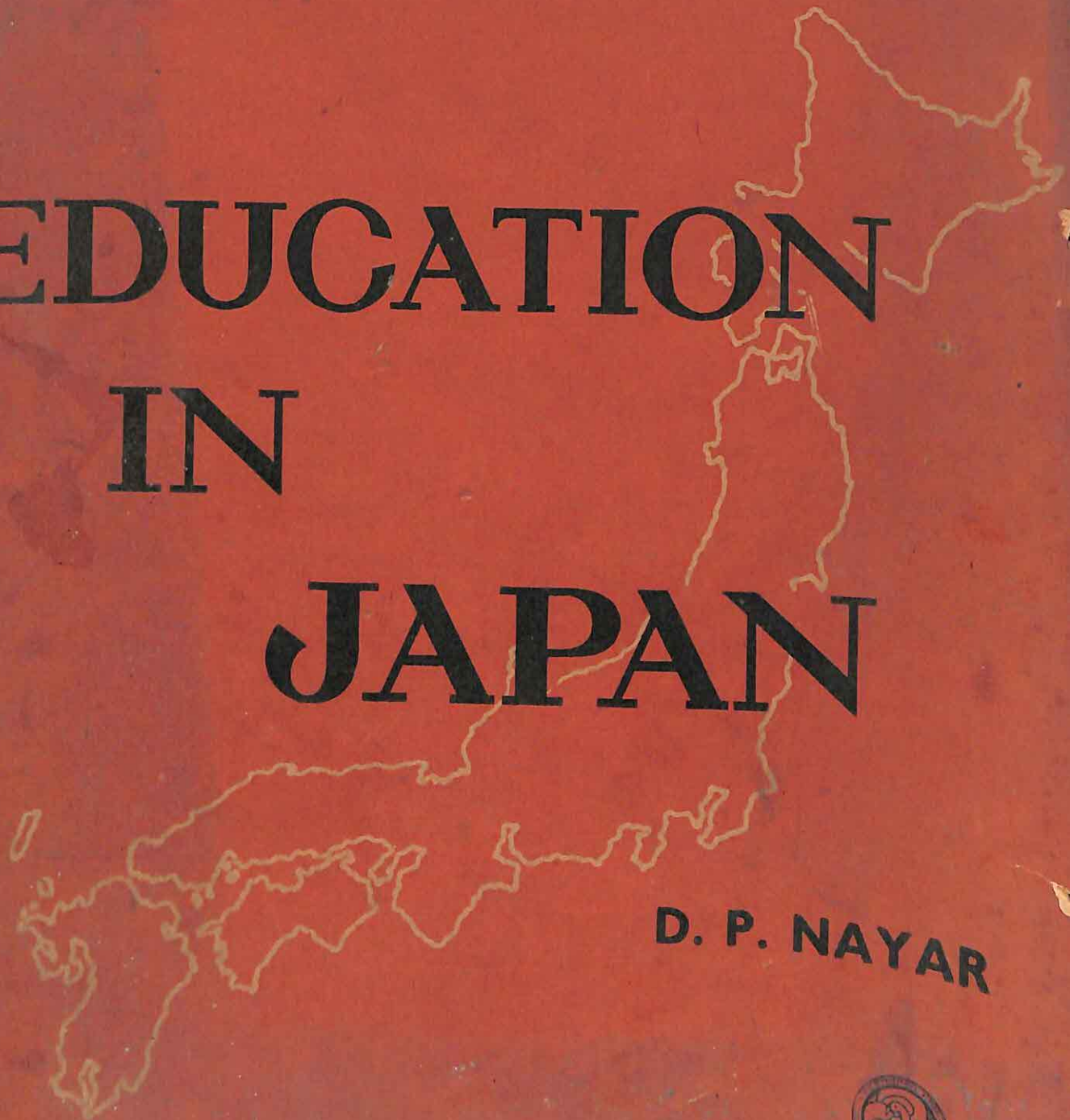
COMPARATIVE EDUCATION SERIES–I

EDUCATION IN JAPAN



D. P. NAYAR

NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

Comparative Education Series—1

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EDUCATION IN JAPAN

D. P. NAYAR

STATE INSTITUTE OF EDUCATION BHOPAL

NATIONAL COUNCIL OF EDUCATIONAL RESEARCH & TRAINING

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FOREWORD

THIS little booklet on the educational system in Japan is the first in the series that the National Council of Educational Research and Training has launched on studies in comparative education. Up-to-date and accurate information on educational systems in the major countries of the world are not readily available to the teachers and educators in this country. This series has, therefore, been planned to fill this long-felt need.

The author of this booklet, Shri D. P. Nayar, Chief, Education Division, Planning Commission, Government of India visited Japan as a member of the Indian delegation to the UNESCO Conference of Education Ministers of Asian Member-states held in Tokyo in April, 1962. During his brief stay in that country he made a study of the educational system and in these few pages he has delineated the most significant aspects of the educational system in Japan with deep insight and a sense of perspective. The conclusions which he draws from his observations in Japan and their possible application to the Indian situation are particularly valuable. The statistics which are appended to the booklet provide useful and interesting data to the student of Comparative Education.

New Delhi
February 19, 1965

PREM KIRPAL
Director, National Council of Educational
Research and Training
and Educational Adviser to the
Government of India

INTRODUCTION

I visited Japan as a member of the Indian Delegation to the UNESCO Conference of Education Ministers of Asian Member-states held in Tokyo in April, 1962. The economic miracle of Japan has been one of the most significant events of the post-war world. The reasons thereof and the springs of action which led this small nation of 93 million people to stage an impressive come-back on the world stage after a crushing defeat would be of interest to any nation, especially a developing one.

This volcanic and mountainous archipelago, covered all over with abundant foliage, hangs from the ear of the Asian continent like a chain of iridescent pearls. It stretches off the East Coast of Asia between 27° and 45° North latitude and 146° and 128° East longitude. Japan is called the Britain of the East as it is situated in more or less the same latitude range and has many other similarities with the British Isles and their people. The warm current flowing upward along its eastern coast keeps its climate generally temperate and pleasant which adds to the charm of this picturesque and fascinating country. It has been called the Land of the Sun. A Chinese Emperor called it 'the Divine Country' where grew the herbs of eternal life.

Japanese history is as romantic as her geography. Her mythical pre-historic past is shrouded in mystery. Tribal feuds among the ancient inhabitants were gradually settled during the first three or four centuries of the Christian era. The leaders of the group that emerged victorious were most probably the ancestors of the present Imperial family. By the end of the fourth century contact was established between Japan and the kingdoms on the Korean Peninsula. Through Korea the Japanese came into contact with China and were deeply influenced by her industrial arts, script, system of medicine, form of government, astronomy and Confucianism. Buddhism came to Japan in 538 A. D. from India also through China and Korea. The contact with China remained uninterrupted till the close of the ninth century after which the Japanese civilization began to develop its own contours. In course of time, the rule of the Imperial dynasty was undermined by the luxuries of its court with the result that local feudal lords grew into power and the authority of the central government dwindled, until Imperial rule was restored by Emperor Meiji (1852-1912) in 1867. This was known as the Meiji Restoration and marked the beginning of the modern period of Japan.

The feudal period was significant for the first contact of Japan with the western world. Towards the middle of the 16th century Portuguese and Spaniards, followed by British and Dutch, came to Japan for trade. Later St. Francis Xavier visited the country to preach the Gospel. Missionary work, however, bred suspicion and in 1662 Christianity and its preaching was banned. Even foreign trade was prohibited except with the Dutch

and the Chinese, as neither of them was engaged in Christian missionary work. This isolation lasted till the Meiji Restoration.

Emperor Meiji established his capital at Edo, the old seat of the feudal government. It was, however, renamed Tokyo, meaning 'The Eastern Capital'. Constitutional monarchy was established. Western civilization was avidly studied and adopted with zest. H. G. Wells, in *The Outline of History* said : 'With astonishing energy and intelligence they set themselves to bring their culture and organization up to the level of the European powers. Never in all the history of mankind did a nation make such a stride as Japan then did.'

Japanese soon made a hit on the international scene. She fought the Sino-Chinese War of 1894-95 and the Russo-Japanese War of 1904-1905. Her victory in these two wars led to the extension of her Empire and raised her status in the international stage. Under Emperor Taisho (1912-1926) Japan entered World War I, following the treaty of Anglo-Japanese alliance concluded in 1902. By the end of the War, Japan emerged as one of the Big Five. This prestige was, however, shattered by her defeat in World War II into which she was dragged by her extreme militarists who managed to capture the political stage, disbanding all the political parties. She had to accept unconditional surrender in August 1945. Japan regained her sovereignty in April, 1952 when the Peace Treaty, signed at San Francisco in September 1951, came into force. Her supreme efforts at reconstruction thereafter have won her the admiration of the world and placed her once again on the world map.

There were many factors which helped the marvellous recovery of Japan, but the predominant factor was the character and industry of her people. Discipline has been ingrained in them through emphasis on it in their entire national life, especially in the educational system, ever since the Meiji era. In their energy, discipline, industry and intelligence the Japanese can hold their own against any western nation. Japanese goods now sell in the most industrialized countries at competitive prices and their quality is no longer in any way inferior. In fact, in many cases, both from the point of view of cost and quality, the Japanese goods beat the goods of many advanced countries in their home markets. The speed of Japanese life really belongs to the restless West than to the dreamy East. The music you hear everywhere is mostly western music though the words are Japanese. Her towns are dotted with night clubs of the western type. Both in art and literature the western influence is predominant. Yet underneath you can always feel the Japanese personality, its artistry and sensitiveness, its decorum and sweetness. This is best reflected in their interior decoration, their elaborate tea ceremony and their dance and drama (the Puppet and the Kabuki).

Before the Second World War, Japan had achieved a sort of synthesis between Western Science on the one hand and Japanese ideals centering on the Worship of the Emperor and their own code of conduct on the other. This was emphasized in the Imperial

Rescript on Education. In the period 1889-1899 revised textbooks were published reflecting this emphasis. The introduction to a representative textbook ran as follows :

> 'This book endeavoured to collect the materials from a child's life experience with the aim to arouse his all-round interest to build his character through these materials and to evoke the spirit of patriotism and the spirit of regarding industry as of great importance.'

Nation School Order was promulgated in March 1941 followed by the Nation School Order Enforcement Regulations in the same month. 'The goal of the nation school is (was) to impart ordinary primary education based on the principles of the Empire of Japan and to provide fundamental training for the people'. 'Principles of the Empire of Japan' meant 'the totality of the glory of the national structure and the principles to be observed by the subjects.'

This balance, however, was violently upset by her surrender and subsequent occupation by the Allies, which shattered her cultural life, destroyed faith in old values, and created a schism between the older generation and the new. New values are not yet born and therefore the tremendous energy of the new generation is still in search of a direction. In course of time, no doubt, out of this jostling of various currents and cross-currents will emerge a new sobriety, a new philosophy, which will blend the old and the new together so that it becomes a natural growth and development of Japanese civilization and culture.

This booklet is an humble attempt to interpret this fascinating people to my own countrymen in regard to their man-making and nation-making programme. Their education system has been studied here, however, only from the point of view of its relevance to us in our own conditions in the hope that it will provoke thought and assist us in the attempt to find our own direction. It was written soon after my return from Japan in 1962. The National Council of Educational Research and Training has already published it in their January, 1965 issue of *Teacher Education* and are now bringing it out as an independent publication, for which my thanks are due to them.

New Delhi
January 28, 1965

D. P. NAYAR

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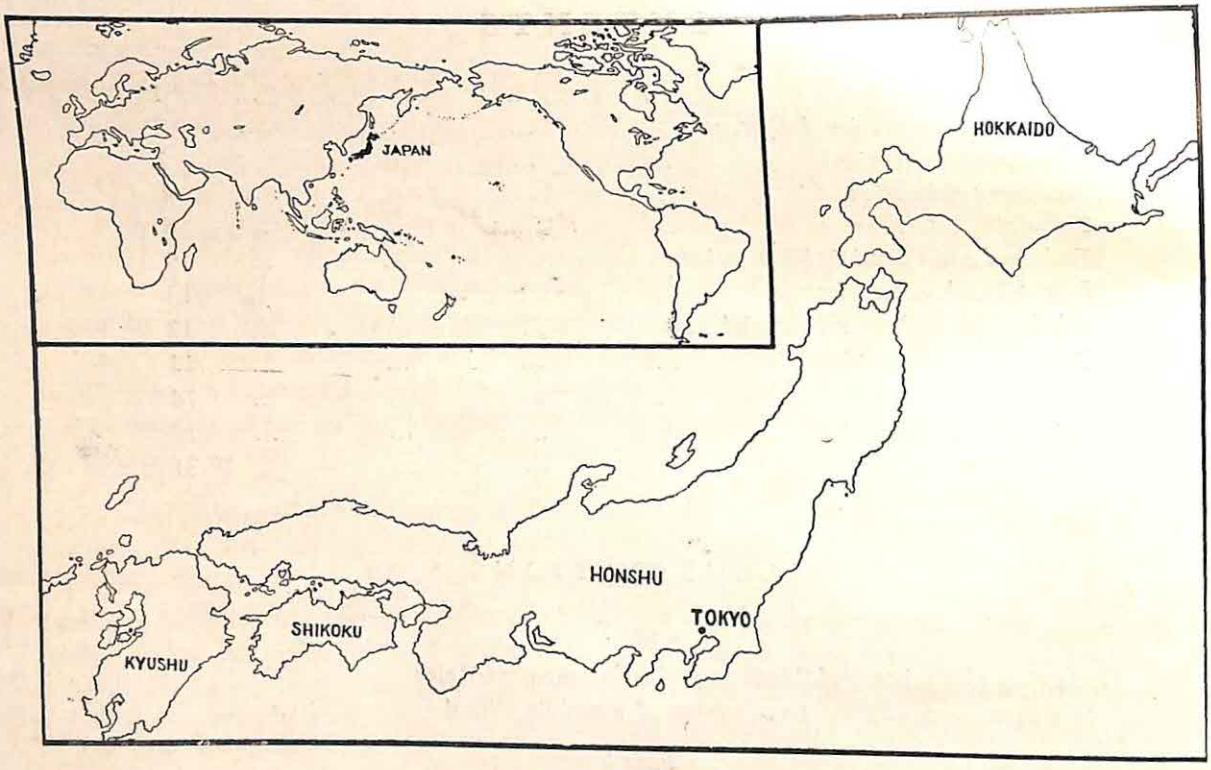


Japan in World Map

EDUCATION IN JAPAN

JAPAN is small in area. But it has a large population. It is more than one-fifth of the population of India. After the War she has successfully faced tremendous problems of development. Her national income doubled during the decade 1950-60. During 1961-70, it is planned to double the national income as it existed in 1960. The major factor in development has been the human factor and the attention they have paid to its development. Thus the educational system of Japan has considerable significance for us in India.

Priority to Education

Japan accords a very high priority to education, including vocational training. In 1959, she spent on education 6.26 per cent of her national income, which is the second highest[1] in the world in spite of the fact that her per capita income is low compared to that of advanced countries. In 1949[2] Japan's per capita income was 100 US dollars as against 1453 of USA, 773 of U.K., 870 of Canada and 482 of France. Even in 1958, Japan's per capita income was only 269.0 U.S. dollars (at 1960 prices). In India we spent only 2.2 per cent of the national income in 1960-61 on education. Japan has raised the share of education out of the national income from 1.85 per cent in 1900 to 6.26 per cent in 1959,[3] first for reasons of prestige as an imperial power, and later on account of her realization of the key role of education in economic development. In the *New Long-Range Economic Plan of Japan* (1961-70) for doubling national income, it is stated :

> One of the major characteristics of the present social economy is that this is the age of technological reforms supported by economic growth, continuing at a high level, and rapid scientific and technological progress.
>
> In order to understand and utilize such progress sufficiently and keep the social economy developing at a high rate in response to the demands of society and industries, it is very important to improve human ability as a part of economic policy.[4]

Emphasis is laid on 'heightening the educational level of the people as a whole' as well as on increasing technical and vocational training. It is further stated :

> The development and utilization of human ability is expected to assume further importance, involving not only

1. The highest is 8 per cent. in the U.S.S.R.
2. Basic statistics related to India with a supplement on the United States and Canada—Ministry of Finance, Economic Division, 1954 (extracted from *National and per capita income of seventy countries in 1949—United Nations, 1950*).
3. Ref. Appendix I.
4. Page 52.

education and training but also a wide range of other fields, such as economy, techniques and social life. It is hence suggested that an organ like a deliberation council will study, in connection with economic growth, various problems concerning the development of human ability and then lay down policies to that end.

Structure of Educational System

Pre-school education extends from the age-group 3-6 years. This is followed by 9 years of compulsory education divided into two stages : the elementary school (age-group 6-12), and the lower secondary school (age-group 12-15). This is followed by the upper secondary school – full-time school for 3 years and part-time school for 4 years. Both types of schools provide general as well as vocational education. A majority of the students are in the full-time schools. Only a small proportion is in part-time schools. Besides these, there are institutions providing general and vocational education through correspondence. There is, in addition, a large variety of schools for practical and vocational training for youth and adults, which adjust the duration and extent of their courses according to the varying needs of the pupils.

Upper secondary schools are followed by universities and colleges. The university course is generally of four years after the upper secondary. The first two years are devoted to general education and the last two to specialized study and research. Along with these are junior colleges of two or three years' duration after the upper secondary. They provide general education, technical education and semi-professional training. For technical courses, a new institution is being set up called the technical college.* It will comprise three years of the upper secondary and two or three years of the junior college. It will provide an integrated course in a specialized technical field after the compulsory education course. The graduates of the technical colleges will by and large produce the technicians Japan needs in very large numbers. Those who wish to join the universities will also be able to do so. The law setting up this institution came into force during the school-year 1961-62.

Apart from the universities, there are graduate schools for advanced study. They provide a Master's course of two or more years and a Doctor's course for three or more years after the Master's course.

Besides these, there are special schools for the handicapped providing kindergarten, elementary, lower secondary and upper secondary education.

The types of schools and their numbers, etc., may be seen in Appendix II.

Elementary Education

Problem of Non-attendance : As regards the compulsory system of nine classes, enrolment for the last 50 years has been as high as 99.8 per cent. There is, however, a serious problem of *non-attendance* at schools for various reasons, mostly of an economic nature. The Government of Japan have taken various measures to encourage school attendance. These include provision of special schools for the handicapped children and financial and other assistance to enable such children to attend them, financial aid to the children of poor families and special

* This was the position in 1962. These institutions must have been set up.

attention to education in isolated areas. Depending upon the income of the parents, assistance is rendered in various forms, such as meeting expenses on textbooks, transport, providing school lunches to needy pupils, etc.

Curriculum : The curriculum of an elementary school may be seen in Appendix III. The significant points which emerge from an examination of the curriculum are indicated in the succeeding paragraphs.

Great emphasis is laid on arithmetic, science and drawing and on the gaining of skills through the practice of handicrafts. The total time given to these subjects is 33% in the first year, 32% in the second year, 37% in the third year, 38% in the fourth year, 45% in the fifth year (including household arts) and 45% in the sixth year. The time devoted to arithmetic and natural science increases from 24% in the first and second years to 34% in the third year. Thereafter it decreases to 31% in the fourth year and increases to 32% in the fifth and sixth years. Music is also universally taught in elementary schools. So is social studies.

Great emphasis is laid on moral education. The report of the Curriculum Council explains the objectives of moral education as follows :

* To understand and acquire the basic action patterns for daily life.
* To assist in the development of individuality and to guide towards firm life attitudes.
* To heighten moral sentiments, and to foster the ability to discriminate between right and wrong, good and evil.
* To enhance moral attitudes and practical aspirations required in a member of the nation and society.

The teaching methods enumerated are : 'Use of problems of everyday life, use of reading, explanations by the instructor, use of social events, use of audio-visual materials, practical activities, study, work.' Such a many-sided teaching method represents an entirely new approach.

Health Education and School Lunch Programmes : Japan has a most elaborate system of school health, health education and school lunches. In the Department of Physical Education in the Ministry of Education, there is a whole section devoted to school health and another on school lunch programmes. When children join school, they are medically examined (articles 4 and 5 of the School Health Law). The regular medical examination of students is carried out 4 times a year (articles 6 and 7 of the School Health Law). Test for tuberculosis or parasite bites is conducted in May or June. If the medical examination renders it necessary, preventive measures are taken, parents are advised in regard to treatment of their wards, and necessary adjustment of physical exercises is made. Teachers are medically examined (articles 8 and 9 of the School Health Law) and the necessary remedial measures are taken for any defect revealed. Special examinations are conducted where tuberculosis is suspected and financial assistance is rendered to affected teachers. According to the statistical research on school health in 1956, the number of schools which rendered health consultation service was 73.8 per cent of elementary schools, 76.1 per cent of lower secondary schools and 77.7 per cent of upper secondary schools. With the promulgation of the School Health Law in 1958, it was provided by article 11 of the Law that

schools should give health consultation to students, pupils or infants. Proper steps are taken to ensure that epidemics do not spread in schools.

Great emphasis is laid on health education of children. It is linked up with lessons in various subjects, the teaching of morals, extra-curricular activities and school events. The subject receives attention throughout the elementary, lower secondary and upper secondary stages.

The school lunch programme has a very old history. In the beginning it made very slow progress but with the enactment of the School Lunch Law in 1954, the law concerning the school lunch programme for the evening courses attached to upper secondary schools, (Law No. 157 in 1956) and the law concerning school health programme of kindergarten and upper secondary courses of blind, deaf and nursery schools (Law No. 118, 1957) the pace was quickened. The school lunch programme reached its present large dimensions in September, 1960. More than 9 million children were given school lunches. These are of two types: one is a complete school lunch which provides bread, milk and side-dishes; the other is a supplementary school lunch which provides either milk or milk and side-dishes for pupils in schools while they bring lunch from homes. In 1960, while 30.3% schools provided complete lunch, 7% provided supplementary school lunch. The position in regard to school lunch programmes may be seen in Appendix IV. I was struck by the extreme cleanliness and hygienic manner of preparing and serving the food. All electrical gadgets were used. I was told that the school lunch programme had a most remarkable effect on the health of the school children. The post-war Japanese school child is taller, broader and healthier. One reason given was the provision of milk and bread. In pre-war Japan, I was told, much bread was not consumed.

Excursions: Great emphasis is laid on excursions. Wherever I went, whether to a shrine or to a theatre, I saw students in their uniforms in very large numbers with their teachers explaining to them things at every nook and corner.

Secondary Education

Having completed the 9-year compulsory stage of education, Japan is now concentrating on secondary education. In 1960, 59.8 per cent of students from lower secondary schools went to upper secondary schools. Based on correlation with the per capita income, it is estimated that in 1970, the percentage will go up to 72. During the New Long Range Economic Plan of Japan (1961-1970) for doubling national income, the Japanese propose to make every effort to provide education and training in some form or other to all 15-18 year-olds.

Secondary education is highly diversified. In 1960, 58 per cent of students were attending general education courses and 42 per cent were attending vocational courses. Most of the new senior high schools will be technical high schools because of Japan's great demand for 'engineers of technical high school level' under her current Plan. In general education itself, there are varying combinations, with varying degrees of emphasis on different subjects, depending upon the aptitude of the students. Similarly in the vocational courses, there is considerable amount of specialization. For example, in the Setagaya Technical School which I visi-

ted, there were the following specialities : Electric Automobile, Electrical Communication and Machine. The courses may be seen in Appendix V (a, b, c & d). The Toritsu Engei Gakuen, an upper secondary school devoted to horticulture, which I visited, had three specialities : horticulture, gardening and food (processing) and the standard of instruction was almost of the professional level. A commerce high school which I visited, apart from common subjects, taught 'general commerce, marketing, economics, business management, current economic trends, statistics, commercial law, commercial book-keeping, banking, accountancy, typewriting and commercial English.'

All the vocational courses have a high content of general education. About 50 per cent of the time is devoted to vocational subjects and 50 per cent to general education. They regard this as necessary even from the point of view of vocational efficiency :

> In the vocational course, general education should be required so that graduates from this specialized course may receive more than mere training in job skills and be enabled to perform effectively in technical and semi-professional vocational fields.

The equipment provided for professional courses is on a very generous scale. For example, in the Setagaya Technical School, about Rs. 26 lakhs worth of equipment (at the prices prevailing in Japan) has been provided in its electrical communication section.

As regards teachers of technical subjects, shortage is being experienced in Japan also. To meet the situation, a law called the Law for Emergency Measure for the Establishment of National Engineering Teacher Training Institutes, etc., was enacted in May, 1961. Under this Law, 'facilities for the training of upper secondary school engineering teachers, with a three-year course of study will be established at nine national universities in 1961-62 to accommodate 880 teacher trainees.'

All the technical textbooks are in Japanese using international technical terms.

Part-time courses and correspondence courses are organized on a large scale both for general and diversified courses (general education-cum-vocational courses). For example, in 1959, as against 2,659 thousand students in full-time upper secondary schools, 543 thousand were in part-time schools and 61,638 in correspondence courses. There has been a sharp rise in the number of those enlisting for correspondence courses. In 1960 their number rose to 65,414 as against 2,710 thousand in full-time schools. These courses are provided both for general and vocational courses in the upper secondary schools. Through a proper use of 'group instruction and individual interview', 'students' voluntary group study, use of television and radio, etc., they are tackling many of the problems of correspondence courses. As regards part-time schools, their importance is growing in regard to technical education. Both these types of courses—correspondence and part-time—have considerable significance for our country where a large number of students are forced to give up their studies prematurely for economic reasons.

There is a University Qualifying Examination where a person, whatever be his

method of study, can be tested whether his scholastic attainments are equivalent to those coming out of the upper secondary schools. Those who qualify are allowed to take the entrance examination conducted by universities and colleges. 'Recently the number of those taking this examination has reached approximately 3,000 per year. About 10 to 15 per cent of the applicants pass the examination.'*.

In Japan, nation-wide achievement tests have been conducted annually since 1956-57 to lay down national norms against which an individual institution can judge its performance. They also enable the national government to draft curriculum policies, improve conditions prevailing in educational institutions, strengthen scholarship programmes, etc. The test is administered to a statistical sample of the public, elementary, lower secondary and upper secondary school pupils.

University Education

University education is provided on a fairly large scale in Japan. In 1957, 7 per cent of the population of the age-group 17-23 were attending the universities/junior colleges against less than 2% in India in 1960-61. This is understandable as their base of elementary and secondary education is much larger than ours.

Administration and Finance: In May 1960, the total number of universities in Japan was 245 ; 72 were established by the national government, 33 by local public bodies and 140 by private organizations. At least one national university is located in each of the 46 prefectures in Japan and is a centre of learning and culture for the prefecture. In addition to these universities, there were 280 junior colleges offering 2 or 3-year courses. Of these, 27 were established by the national government, 39 by local public bodies and 214 by private organizations.

All universities come under the jurisdiction of the Minister of Education.

The majority of the institutions of higher education are private. In 1960, 57.1 per cent of the universities and 76.4 per cent of the junior colleges were private institutions.

About one-third of all national, local, public and private universities offered post-graduate courses in 1960.

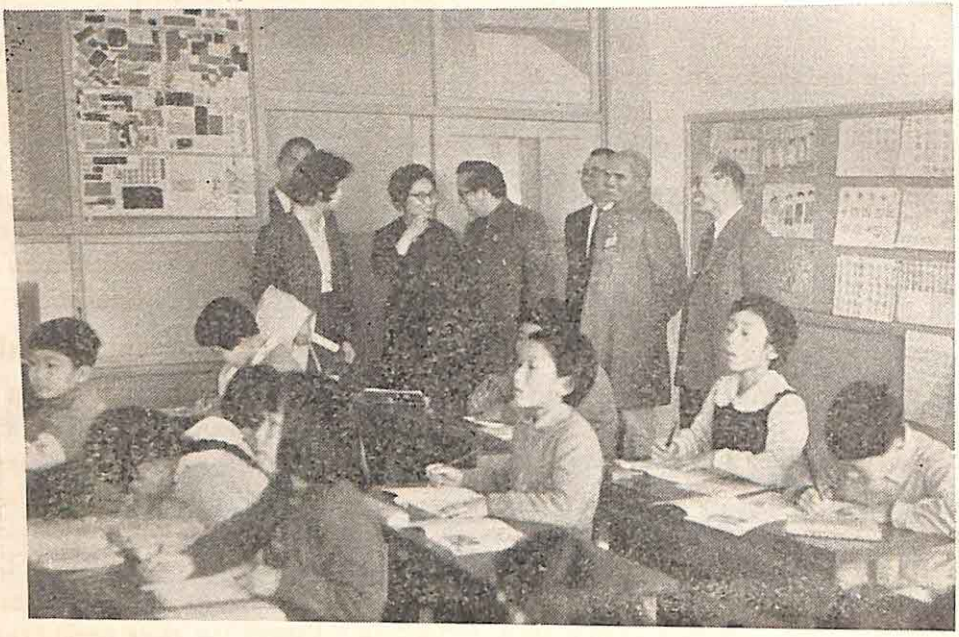
Each university is governed by its own governing agency, but personnel administration of a national university is conducted by the Ministry of Education ; and that of a local public university by the chief of the local public body. In a *private university*, personnel affairs are administered by the juridical person who established the university.

National and local public universities are financed mainly from funds of the national government and local public bodies respectively. National subsidies and loans, however, provide a considerable portion of the resources available with private universities. To meet the financial difficulties of private universities, a *juridical person* named the Private School Promotion Association was founded. This association is completely financed by the national government. The functions of this association are to give loans to school juridical persons and assistance in the promotion of education.

* *Youth Education in a Changing Society*—1961, p. 70.

Meeting of Ministers of Education of Asian Member States organized jointly by UNESCO and ESCAFE in Tokyo (2-11 April, 1962)—The picture shows (Seated left) The Education Secretary, Govt. of India and (Seated right) The Author who formed The Indian Delegation to the Conference

In Discussion with the Headmaster of A Middle School



A Moral Education Class in an Elementary School

A Social Studies Class in an Elementary School

Controlling Admissions : Admission to junior colleges and universities is very difficult. Selection methods for applicants to institutions established by the national government, local public bodies and private bodies are generally the same, though occasionally they differ considerably. To be admitted to these institutions, one must either complete his course of study in an upper secondary school, or exhibit comparable scholastic attainment recognized by the Minister of Education. Practically all higher institutions limit the number of students to be admitted each year. Admission is based on the results of a scholastic examination, a physical examination and reports from the student's upper secondary school principal. Admission is highly selective even more so than to the upper secondary schools.

The percentage of upper secondary school graduates of March 1960 who entered junior colleges and universities in April of the same year was 17.2 per cent—males 19.7 per cent and females 14.2 per cent. In India this percentage was more than 50 in 1957-58.

Evening Courses : Evening courses are offered mostly by private institutions. The ratio of the evening course enrolment to total enrolment is 13.1 per cent at the university level and 23.6 per cent at the junior college level.

Faculty-wise Enrolment : The percentage of students enrolled in the various faculties and departments of universities, graduate schools and junior colleges in 1960 are shown in Appendix VI. The enrolment in arts courses was 54.8 per cent of the total universities, graduate schools and junior colleges and that in science and engineering courses was 18.3 per cent of the total in 1960-61. The comparable percentages in India are 57.7 and 34.2 respectively for 1961-62.

The whole question of university education is now under consideration by the Central Council for Education, an Advisory Body to the Ministry of Education.

Technical and Vocational Education

Secondary Stage : According to the latest survey, the results of which were incorporated in the New Long-Range Economic Plan, it was found that the demand for new graduates from technical courses of upper secondary schools would be 1 million 392 thousand during the 11 years from 1960-70. During the same period the supply of new graduates from such courses at the present rate of admission would total only 953 thousand. To meet the shortage of about 4,40,000 during this period, the Ministry of Education planned a 7-year tentative programme in 1960 for the expansion of technical courses in upper secondary schools. This includes both the expansion of existing schools and the setting up of new ones. The national subsidy is being increased for the purpose. New emergency training institutes for teachers are also being set up, and affiliated to 9 existing national universities.

University Stage : At the university stage, the demand for new graduates from science and technology departments of universities and colleges is estimated to amount to 460,000 during the 11-year period. On the other hand the supply of new graduates from such departments during the same period will total only 290,000, assuming that the present admission quota will remain the same. The result is the deficit

of as many as 170,000. The facilities in the existing institutions have already been expanded. The remaining shortage is sought to be met by expanding facilities in existing institutions and by setting up new institutes of technology in proper areas. The latter institutions will allow new and efficient education methods to be followed without being bound by conventional methods. In 1961-62 according to a phased programme, the facilities for science and technology at the private institutions were also increased by the national government through the grant of long-term low-interest loans to these institutions through the Private Schools Promotion Association. The educational equipment standards are being raised and obsolete equipment is being replaced to improve the quality of scientific and technological education. The Plan has recommended that with a view to making scientific and technological education more efficient, various research equipments at universities and private industries should be made available for mutual use, and the students should be given opportunities to work at private plants and private industrial firms should assist universities in bettering their research equipment. To meet a possible increase in the number of students, the Plan has recommended that more professors should be trained at post-graduate schools and personnel exchanged between universities and industrial circles.

Research: The investment in research is being stepped up. The total of research investments in 1970, based on the national income, is estimated at about 300,000[1] million yen, about 4 times the 1958 figure. This means that the ratio of research funds to the total national income will increase to 1.3 per cent in 1970 from 0.9 per cent in 1958. They have recommended that the ratio should be increased to the advanced nations' level of about 2 per cent (400,000[2] million yen) to meet future requirements for boosting the scientific level. The post-graduate schools will be strengthened for improving the system of research. A system of joint research will also be necessary. Increased inter-changes with foreign scientists will also be required. The present comprehensive research programme, covering both fundamental and applied research, is to be pushed ahead with greater interest. Private industry is supposed to lead in industrialization experiments and applied research. Universities and government-run research organs should play more active roles in fundamental reasearch, research required for specific government projects, research that private organizations are unable to carry out and research and technical guidance for medium and small enterprises which are weak in research and development activities.

Vocational Training: Vocational training is also necessary for youth outside regular institutions as well as for retraining workers in special techniques and knowledge. With the industrial level growing higher, retraining of workers and training of new workers has become urgent. This will also facilitate movement of labour from centres of low productivity to centres of higher productivity. The Japanese consider it best to enforce vocational training programmes on an enterprise level. The government assists those enterprises which cannot afford to provide vocational training. The new Plan has advocated the popularization of the

1. Equivalent of Rs. 394·5 crores.
2. Equivalent of Rs. 525·9 crores.

technical license system which serves to deepen social appreciation of technicians.

There are a large number of institutions providing vocational training in a large number of trades to those who have finished compulsory education. The length of training varies from 2 months to 2 years, according to the nature of the trade in which training is given. There are both day and evening courses. Stress is on the acquisition of specific skills. The length of training in the simpler, more elementary processes ranges from two months to one year and for the more advanced technical operations, upto two years. Programmes of training in excess of two years in the more advanced technical courses were initiated by vocational training centres in 1960. The vocational skills of about 113 different trades and industrial fields are being taught, including such activities as metal processing, electricity, the clerical trades, hairdressing and cosmetology. The standards of curriculum, length of training, and minimum equipment are based on the Labour Ministry Ordinance.

One of the things which struck me as most interesting was the in-service vocational training of employees. In Japan, entry into industry is on a highly competitive basis. Those selected are put through a period of training and according to their capacity, given adequate promotion at the end thereof. This in-service vocational training is conducted by the industrial organizations or companies for their own purposes and largely under their own direction, though minimum standards regarding subjects to be taught, length of training, basic equipment, etc., have been laid down by the Labour Ministry Ordinance in regard to 185 different trades. Small business enterprises establish cooperative training agencies, subject to approval by the prefectural governors. In 1959 the number of establishments which were providing approved vocational training within industry was 18,643, the number of trainees being 54,700 and instructors 28,000. Of these establishments, 18,383 were members of 467 cooperative vocational training organizations with a total of 38,900 trainees—71% of the total number of employees receiving on-the-job vocational training in private industries. Approximately 90% of the member establishments of the co-operative organizations are small-scale establishments with less than 10 employees each. The average ratio of instructors to trainees is 1 instructor to 2 trainees. In India, this ratio is 1 to 10-15. In most cases, the length of vocational training within industry is three years but in some specialized trades such as lacquer work or cabinet-making, the length is four years. The subjects taught are both general as well as special. For example, in the case of mechanics, general subjects are social studies, physics, mathematics, physical training, chemistry, practical foreign languages, Japanese language, and guide to management ; and the special subjects include guide to machine industry, guide to electrical industry, construction machinery, materials, material dynamics, machinery and drafting. Each training year generally includes 1,800 hours of training. The total number of hours of training required to complete the vocational training programme within industry is 5,400. Of this 5,400 hours, a minimum of 980 hours must be completed in general and special subjects in a three year's period. Trainees who have completed the vocational training course in the public vocational training centres and other autho-

rized vocational training centres are required to complete a standard trade proficiency test in the area of their trade. The trade proficiency tests are conducted by the government based on the standards prescribed by the State. This is intended for the purpose of improving the skills and status of workers. Those who successfully pass the trade test are called 'Certified Skilled Workers' (Ginoshi).

Cooperation of Industry: Both in the field of research and education and training, the utmost cooperation between training institutions and industry is visualized. Industry is not only supposed to supply educational institutions with the latest equipment but also lend them their experts for teaching purposes.

Parent-Teacher Associations

Close cooperation between schools and parents is required for a successful and complete education. About 90 per cent of Japan's elementry, lower and upper secondary schools today have Parent-Teacher Associations.

Individual school P.T.A's are represented by delegates to municipal and prefectural P.T.A. federations and the latter by delegates to a national P.T.A. federation. As a national organization, the Japan P.T.A. Federation was officially founded in October 1952.

Although P.T.A. functions vary, the general aims are the promotion of the welfare of youth, cooperation with the schools, and the development of adult education, especially parent education.

P.T.A. activities are: study of new educational techniques by parents and teachers; cooperative development of school lunch services; planning of school health and sanitation programmes; assistance for protection of handicapped children; planning and participation in school activities; providing school equipment; parent-teacher study-group activities; study and practice of child care; study of the application of science to home life and the democratization of home life; parent education and home projects; consultations about home life; guidance of children in the use of leisure time; prevention of juvenile delinquency; vocational guidance; planning of social welfare services; practice of democratic procedures in group meetings, etc.

Scholarships and other Financial Aids and Guidance to Students

Scholarships and other assistance to students are rendered by the Japan Scholarship Society, the Students' Aid Association, private scholarship societies and the welfare fund for mothers and their dependent children.

The largest organization engaged in the scholarship service to students is the Japan Scholarship Society, which was established in 1943 as a semi-official body. Most of the funds loaned to students are financed by loans from the National Treasury. Scholarship loans to students are repaid in instalments. The Society also receives donations from private sources to augment its scholarship services.

Two scholarship systems are administered by the Society. The first is designed to help students of upper secondary schools and universities to continue their schooling, the second is a system of special scholarships under which capable students,

whose families do not have the means to finance their attendance in upper secondary schools, are selected while in the lower secondary school and given promise of scholarship loans in case they enter upper secondary schools. The latter system was launched in 1958, but it was decided that the system be expanded to benefit those wishing to enter university also.

Monthly scholarship loans are as follows :

1,000[1] yen for an upper secondary pupil.

2,000-3,000[2] yen for a junior college or university student.

6,000-10,000[3] yen for a graduate student.

The table below shows the number of scholarships awarded by the Japan Scholarship Society by school levels as in March 1961 :

School level	No. of scholarship students	Scholarship students as percentage of total students
1. upper secondary schools	99,575	3.1
2. universities		
(a) teacher training faculty	25,526	46.4
(b) other faculties	94,142	15.0
3. graduate schools	6,301	41.3

It will be seen that a very high percentage of scholarships is awarded to teachers and post-graduate students.

In addition to the above society, there are other student-aid organizations in Japan. In January 1960, there were 62 organizations—242 local public bodies, 128 schools and 251 private bodies. In January 1960, these organizations awarded scholarships to 40,854 students—23,826 to upper secondary students, 15,905 to university students, 146 to graduate school students and 977 to others.

A government welfare fund for widows with dependent children also provides several types of loans including scholarship loans. Such loans are made by the prefectures for upper secondary school, junior college and university students under 20 years of age or until graduation of the students. The national government lends half of the necessary funds free of interest to the prefectures which administer the loans.

Of a different nature is the Students' Aid Association, the purpose of which is to improve the mental and physical status of students. It does not lend money to individuals for school expenses, but contributes funds to improve the conditions and circumstances of student life in general by creating guidance institutes.

Textbook System in Japan

The authorization of textbooks for school use in all elementary and secondary schools in Japan is the responsibility of the Minister of Education. Local selection of textbooks is limited to those authorized by the Ministry of Education.

Textbooks for special schools for the blind and deaf, and textbooks for voca-

1. Equivalent of Rs. 13.1 (7604.71 Yen—Rs. 100. Reserve Bank of India Bulletin, July 1962.)
2. Equivalent of Rs. 26.3 — Rs. 39.4.
3. Equivalent of Rs. 78.9—Rs. 131.5.

EDUCATION

tional education in upper secondary schools are compiled and published by the Ministry of Education because of the small market.

In the first instance, either the author or the publisher applies for authorization to the Minister of Education, who consults the Textbook Authorization and Research Council on whose recommendations he bases his decision. Lists of authorized textbooks are sent to each school through the prefectural boards of education, which hold textbook exhibitions for the convenience of teachers in recommending textbooks for local adoption.

Municipal boards of education decide which textbooks to adopt on the basis of the recommendation of the local school personnel. The number of copies required is reported through the prefectural boards of education to the Ministry of Education, which estimates total textbook requirements.

Publishers print the authorized books according to the instructions of the Ministry.

Textbooks are distributed free to all children in the special school (blind and deaf), to children to whom the life protection law (3 per cent of all school children) applies and to children of recipients of school allowance (4 per cent of all school children).

Financing of Public Education

In Japan, public education is financed from Government funds, donations and expenditure shared by parents. Government funds are provided by the national government, prefectures and municipalities. The national government, apart from meeting its own direct expenditure, also assists prefectures and municipalities. This is done by special subsidies for education and also by the Local Finance Equalization Grant of which a part is devoted by local authorities for education. National government also gives subsidies to private schools and research organizations.

National subsidies are given mainly for the following items :

1. Half the salaries of teachers and clerical personnel in elementary and lower secondary schools and half the total expenditure incurred for teaching aids. This is the national government's contribution towards compulsory education.
2. One-third of the total expenditure incurred on facilities and equipment required for industrial education in upper secondary schools.
3. Half the construction cost of elementary and lower secondary schools and two-thirds of the reconstruction of public school buildings damaged by calamities, etc.

The Local Finance Equalization Grant is given to local public bodies to equalize the disproportionate distribution of revenue sources between the national government and local public bodies, and also to ensure a standard programme of governmental expenditure throughout the country.

Educational expenditures of the prefectures include the direct expenditure for educational activities operated by the prefectures, payment of salaries of personnel

employed in elementary, lower secondary, part-time upper secondary and special schools established by municipalities and subsidies for certain educational activities operated by the municipalities. Prefectures also are responsible for the payment of pension expenses for retired teachers of municipal kindergarten, elementary and lower secondary schools.

Municipalities are responsible for expenses incurred for operation and maintenance of plant, for school equipment and supplies and for buildings.

There are considerable amounts paid by the parents of pupils.

Governmental expenditure on education increased from 14.1 per cent in 1949-50 to 21.1 per cent of the total governmental expenditure in 1959-60. The total governmental expenditure on education was shared between the national and local goverentments in the ratio of 48.3 : 51.7 in 1959-60. The national expenditure consisted of 11.7 per cent on national schools and other direct expenditures, 22.2 per cent on national subsidies and 14.4 per cent on Local Finance Equalization Grant.

The distribution of public expenditure in 1959-60 on education by school levels was as follows :

School level	Percentages In Japan*	In India**
1. Kindergarten	0.5	0.2
2. Elementary schools	42.1	29.9
3. Lower secondary schools	22.7	15.0
4. Special schools	0.8	1.3
5. Upper secondary schools	14.2	25.7
6. Miscellaneous schools and Correspondence education	0.1	4.0††
7. Junior colleges and Universities	11.4	21.2
8. Social education	2.5	†
9. Educational administration	5.7	2.7
	100.0	100.0

It will be seen that as against 45 per cent in India, the expenditure on compulsory education (elementary and lower secondary schools) in Japan was nearly 65 per cent.

The important points emerging from an examination of the Japanese system of education and which may be of relevance to us are indicated below :

Points for Consideration

Priority : One lesson which the post-war economic and industrial development of Japan has for us is the high priority attached to education. This merits close

* Excludes expenditures of donations that are not accounted for by governmental agencies.

** Excludes expenditure on buildings, scholarships, hostels and other miscellaneous items as stage-wise break-up is not available.

†† Vocational and technical schools.

† Included under item 4 above.

study with a view to seeing to what extent we need to revise upwards our own priority to education in our developmental plans.

Elementary Education: If the problem of non-attendance at the elementary stage is acute even in a country like Japan which is much better placed than ours, it may be presumed that our problem of non-attendance and drop-outs, which is one of our most serious problems at this stage, will be with us for a long time to come and, as in Japan, the State may have to come forward with considerable assistance to enable the poorer sections of society to go through their schooling. This is an important point which may be borne in mind while preparing our perspective plan.

Our curriculum at the elementary stage needs to be strengthened in regard to arithmetic, science, drawing and gaining of finger-skills with emphasis on moral education, health education and excursions.

The school lunch programme in our country will need to be launched on a large scale. Its importance in our educational system does not seem to have been fully grasped.

Secondary Education: At the present stage of our development, the diversification of education at the secondary stage needs to be carried out much further and the vocational content thereof considerably increased so that the large majority of the students can immediately walk into employment at the end of their secondary stage and not after a further period of vocational training.

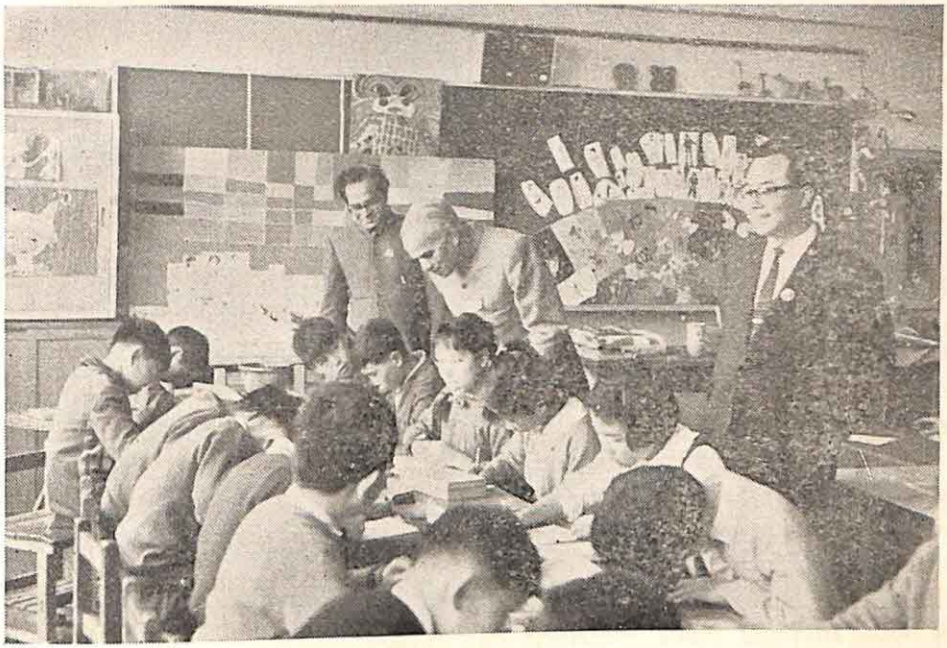
Our secondary schools need very considerable improvement from the point of view of equipment and teachers before the objective mentioned above can be achieved.

The programme of preparing technical textbooks in regional and national languages needs to be considerably stepped up in our country. I felt that the widespread technical knowledge in Japan was, to a fair extent, due to science and technical education being given in the Japanese language.

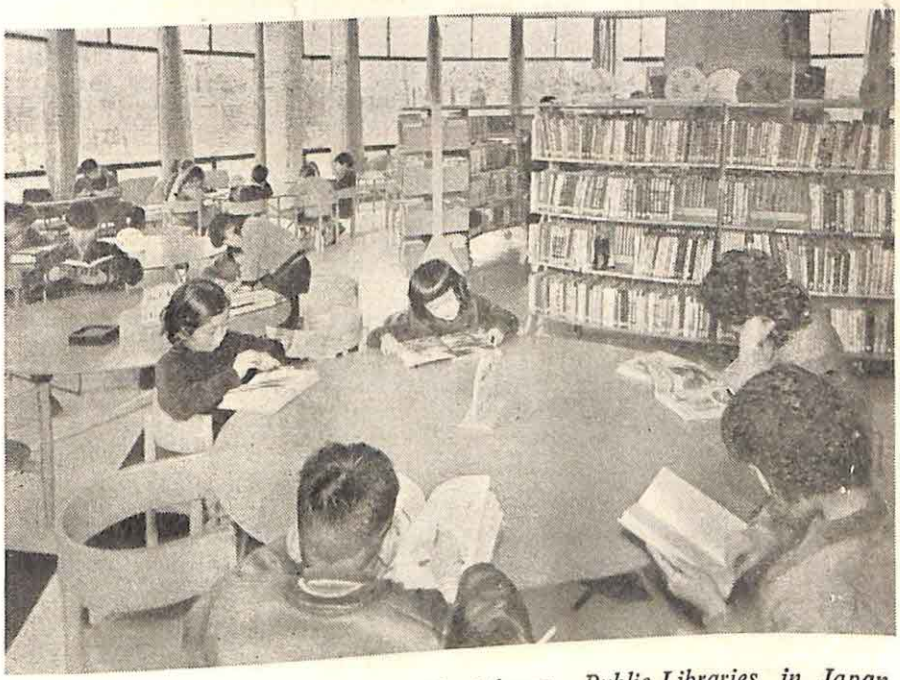
Large-scale organization of part-time and correspondence courses for both general and vocational education is necessary in our country, especially when due to economic circumstances, a large number of people—some of them brilliant—are forced to enter life early and it will take a considerable time for our scholarship schemes to reach a considerable number of students.

University Qualifying Examination: A university qualifying examination, as in Japan, may be considered for introduction in our country. It will be a measure in the interest of social justice as it will enable those who are forced to enter life early but whose situation later on improves enough to enable them to think of a university career too, and pursue their studies further. It will also enable us to tap talent which has educated itself through informal ways.

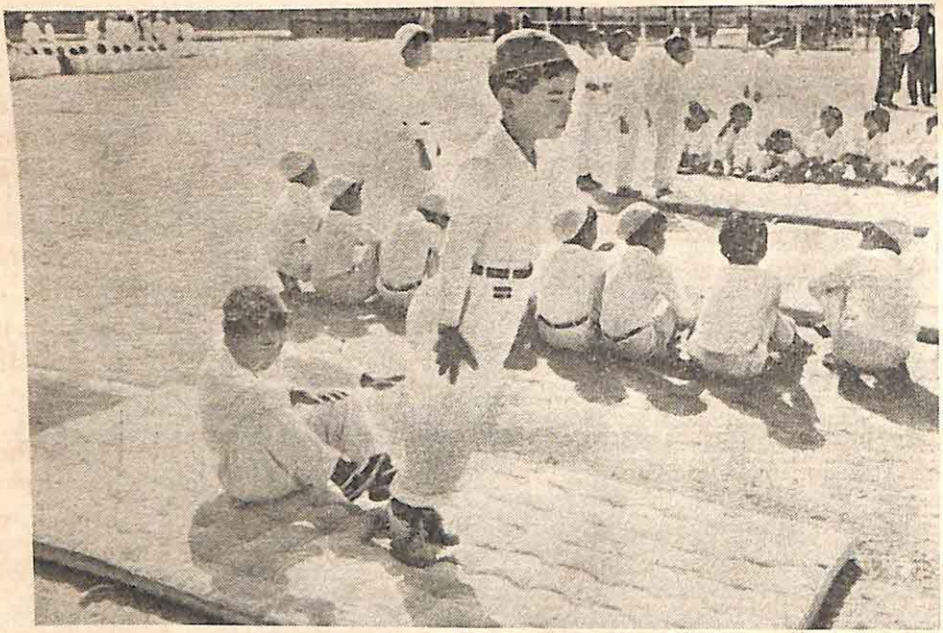
Achievement Tests: The nation-wide achievement tests, as organized in Japan, may be considered for introduction in our country as well for toning up educational standards, for evaluating curriculum policies, etc.



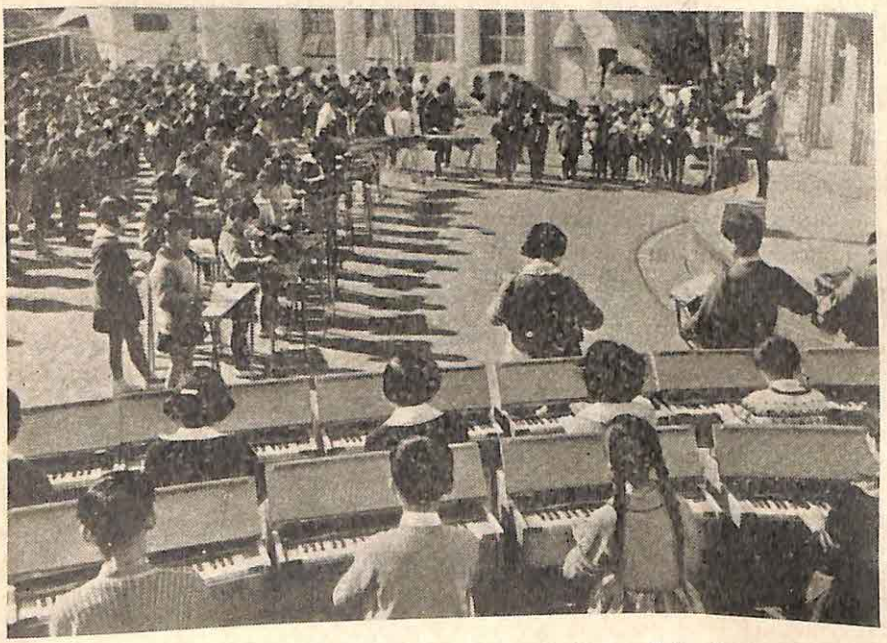
A Drawing Class in a Japanese School



Children's Reading Room, Hibiya Public Library. Public Libraries in Japan Play a very Important Educational Role for Children and Adults Alike.



Physical Training Class. Primary School Pupils Practise Gymnastics on Mats as part of their Regular Physical Education Course.



An Outdoor Concert by All The Pupils of A Primary School—Music is a very Important Part of the Curriculum in Japanese Schools

University Education : We should take courage from the experience of Japan in controlling admissions which are highly selective. They have succeeded in restricting their admissions to 17.2 per cent of those who pass their upper secondary school examination as against more than 50 per cent in India.

Research : The Japanese are considerably increasing their emphasis on research. They are increasing expenditure on research from 9% of the national income in 1958 to 1.3% in 1970.

Technical and Vocational Education : The extent and variety, to suit individual needs, of facilities for vocational training provided by Japan are remarkable. This is intended to cover both new workers and the retraining of workers to facilitate movement from centres of low productivity to centres of high productivity.

The experiment of technical colleges, which Japan has launched and which combine in an integrated course the three years of the higher secondary school and the two years of the junior college to give intensive technical training for preparing technicians, appears to be interesting and may be considered for adoption in our country.

Japan has a very well-organized and comprehensive system of in-service training, which is remarkable for its efficiency and for the close co-ordination of the result of the trainee and his placement within industry. The cooperative organization of in-service training by various small concerns may also be of relevance to us.

There is considerable coordination and mutual help from the point of view of teachers and equipment between industry and educational institutions in education, training and research.

Parent-teacher Association : The close association of parents with the education of their children through parent-teacher association is organized on a nation-wide scale.

Scholarships : An interesting feature of the scholarship system in Japan is that scholarships are provided largely through semi-official organizations rather than directly by the Government.

A very high percentage of scholarships is awarded to teachers and post-graduate students.

Scholarships are also provided as loans on a large scale.

Textbooks : The system of prescribing and publication of textbooks in Japan seems to combine the advantages of private initiative, governmental screening and planned production.

Finance : As against 45 per cent in India, the expenditure on compulsory education (first nine classes) in Japan was nearly 65 per cent.

APPENDIX I

Expenditure on Education in Japan

Year	Real National Income per capita, 1960 prices $	Percentage of National Income spent for Education	Percentage of GNP spent for Education
1900	82.6	1.85	—
1950	163.8	4.81	4.13
1951	177.8	4.79	3.99
1952	192.1	5.23	4.35
1953	200.0	5.58	4.30
1954	203.2	6.04	4.90
1955	223.9	5.36	4.61
1956	242.6	5.12	4 41
1957	258.0	5.55	4.52
1958	269.0	5.93	4.87

SOURCE : *UNESCO Report of Meeting of Ministers of Education of Asian Member-States.* April, 2-11-1962, Tokyo.

APPENDIX II

Number of Schools, Teachers and Pupils (Public and Private Schools)

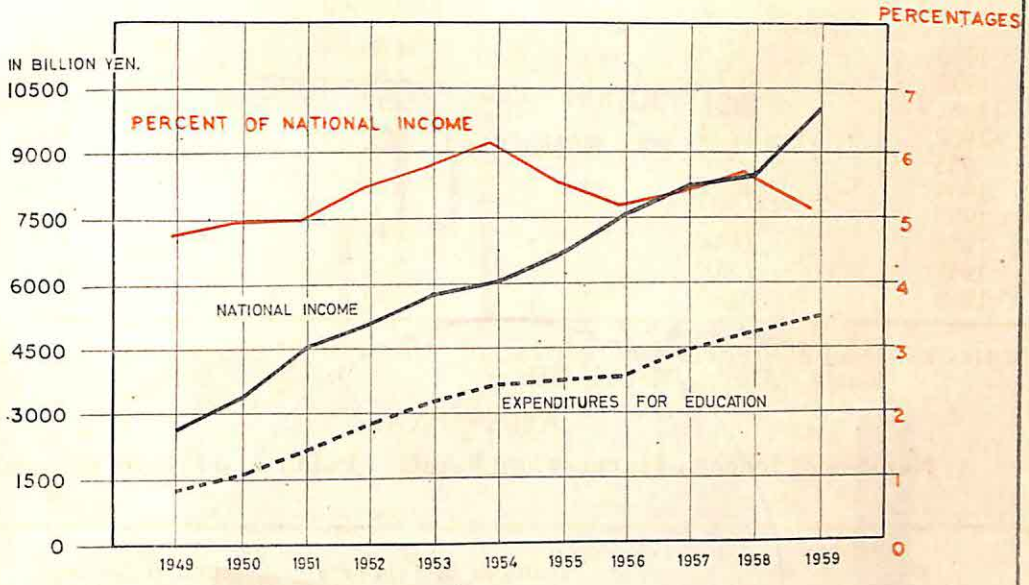
(As of May, 1960)

	Number of Schools	Number of Teachers			Number of Pupils (Unit : 1,000)		Number of Pupils per Teacher
		Full time	(Female included)	Part time	Total	Female included	
Total	54,187	823,303	293,225	94,487	24,818	12,034	
Kindergarten	7,055	31,329	28,841	4,537	742	360	—
Elementary School	22,701	360,660	163,438	2,029	12,591	6,166	23.7
Lower Secondary School	12,210	205,988	44,751	10,829	5,900	2,891	34.9
Upper Secondary School	3,549	131,719	22,488	22,093	3,239	1,474	28.6
University and College	245	44,434	2,693	16,587	626	86	24.6
Junior College	280	6,394	2,251	7,262	83	56	—
Special Education School	209	6,091	2,414	334	36	16	—
Miscellaneous School	7,938	36,688	26,349	30,816	1240	924	5.9
(University, College and Junior College in Tokyo)	156	16,816	—	—	361	61	33.8

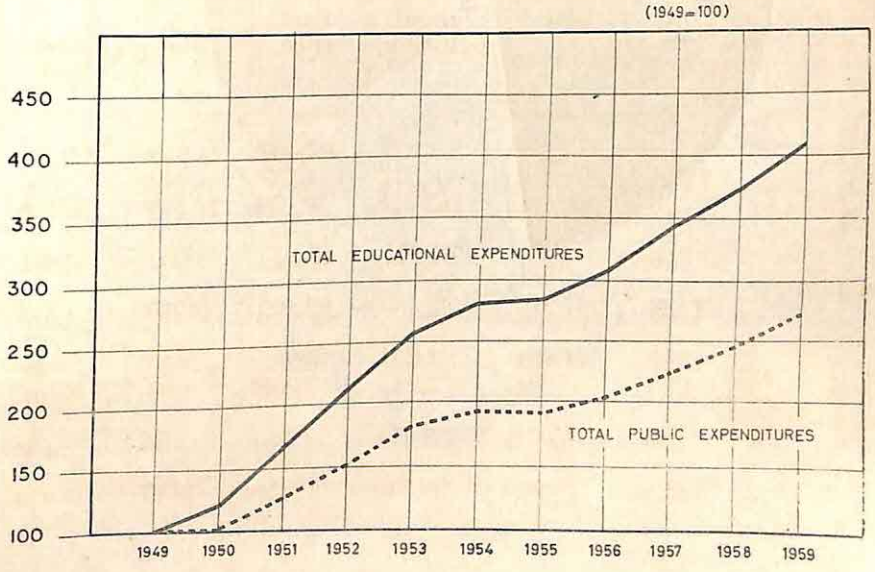
SOURCE : *A Survey of Japanese Education with Statistics,* 1961. p. 4.

INCREASE IN EDUCATIONAL EXPENDITURE
(1949—1959)

NATIONAL INCOME & TOTAL EDUCATIONAL EXPENDITURES



TOTAL PUBLIC EXPENDITURES & EDUCATIONAL EXPENDITURES



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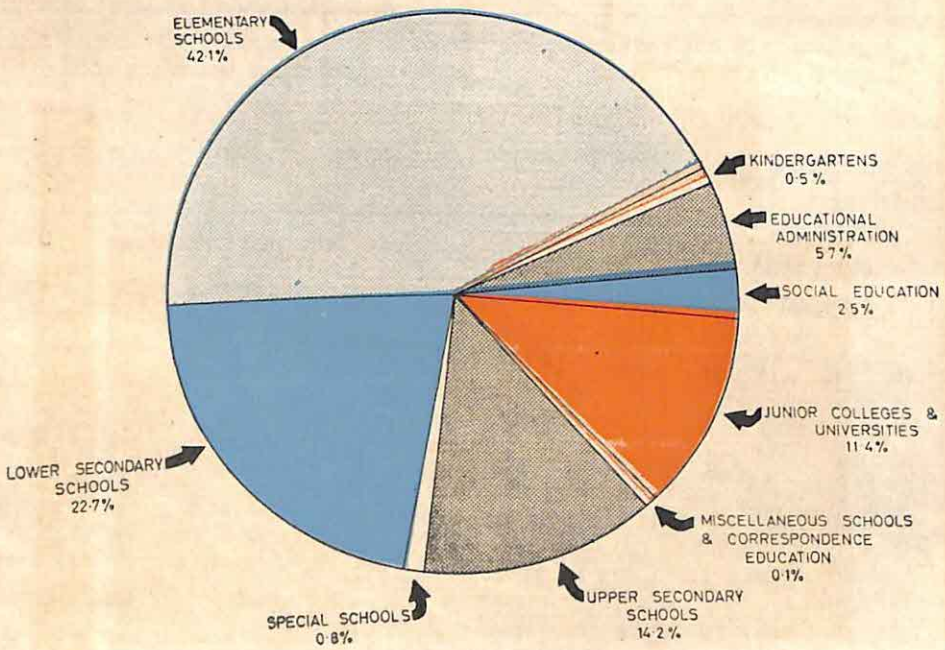
DISTRIBUTION OF EXPENDITURE BY SCHOOL LEVEL



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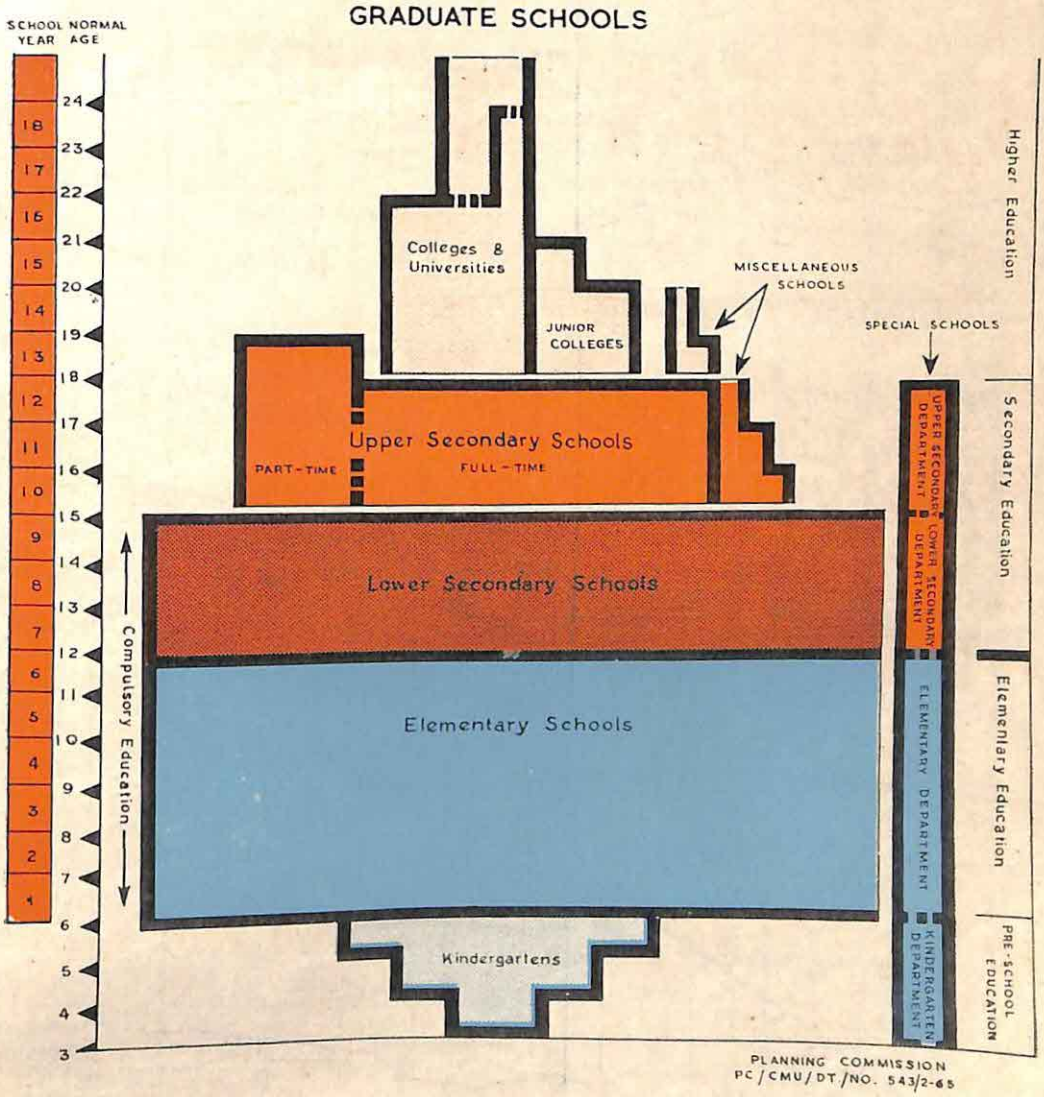
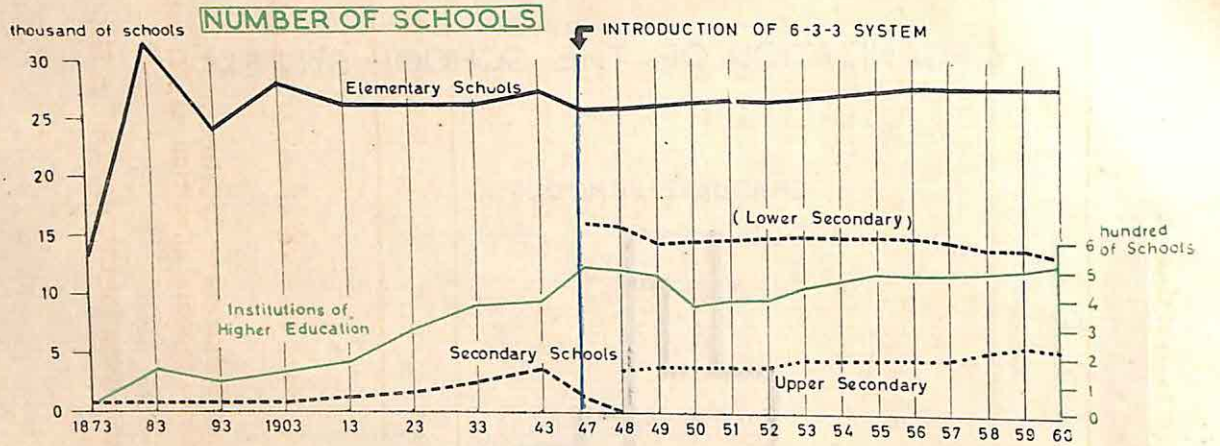
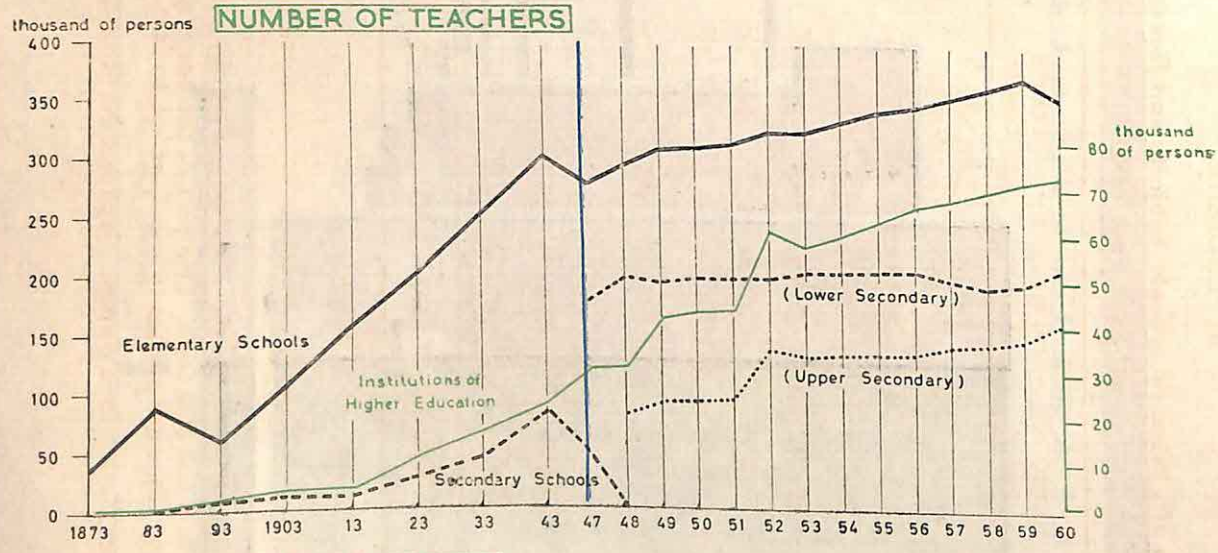
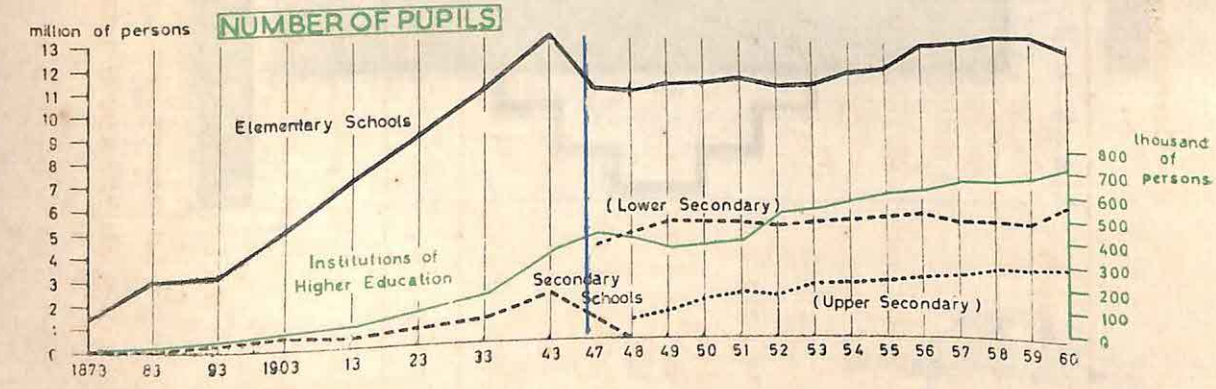
ORGANIZATION OF THE SCHOOL SYSTEM



INCREASE IN SCHOOL TEACHERS AND PUPILS







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APPENDIX III

Curriculum of a Primary School : Subjects and Hours of Instruction

(School Year 1958)

Subject	First Grade		Second Grade		Third Grade		Fourth Grade		Fifth Grade		Sixth Grade	
	No. of Periods	%	No. of Periods	%	No. of Periods	%	No. of Periods	%	No. of Periods	%	No. of Periods	%
Japanese language	238 (7)	29.2	315 (9)	36.0	280 (8)	29.6	280 (8)	27.6	245 (7)	22.6	245 (7)	22.6
Social studies	68 (2)	8.3	70 (2)	8.0	105 (3)	11.1	140 (4)	13.8	140 (4)	12.9	140 (4)	12.9
Arithmetic	102 (3)	12.5	140 (4)	16.0	175 (5)	18.5	210 (6)	20.7	210 (6)	19.3	210 (6)	19.3
Natural science	68 (2)	8.3	70 (2)	8.0	105 (3)	11.1	105 (3)	10.3	140 (4)	12.9	140 (4)	12.9
Music	102 (3)	12.5	70 (2)	8.0	70 (2)	7.4	70 (2)	6.9	70 (2)	6.5	70 (2)	6.5
Drawing & handicrafts	102 (3)	12.5	70 (2)	8.0	70 (2)	7.4	70 (2)	6.9	70 (2)	6.5	70 (2)	6.5
Household arts									70 (2)	6.5	70 (2)	6.5
Physical education	102 (3)	12.5	105 (3)	12.0	105 (3)	11.1	105 (3)	10.3	105 (3)	9.6	105 (3)	9.6
Moral education	34 (1)	4.2	35 (1)	4.0	35 (1)	3.8	35 (1)	3.5	35 (1)	3.2	35 (1)	3.2
Total periods	816 (24)	100.0	875 (25)	100.0	945 (27)	100.0	1,015 (29)	100.0	1,085 (31)	100.0	1,085 (31)	100.0

NOTE : 1. The standard period of instruction is 45 minutes.

2. Figures in parentheses indicate average weekly hours of instruction based on a school year of 35 weeks (34 weeks for first grade).

3. In pursuance to Article 24, paragraph 2 (of the School Education Law Enforcement Regulations) religion is taught in addition to moral education. One part of the hours assigned to moral education may be used for religious instruction (the same applies to lower secondary schools).

SOURCE : *Development of School Curricula in Japan.* Japanese National Commission for UNESCO 1961. p. 71.

APPENDIX IV

The Situation of School Lunch Programme as at the End of September 1960.

		Total number throughout Japan	Complete school lunch	%	Supplementary school-lunch	%	Total	%
Elementary School	Number of schools	27,072	11,027	40.7	2,265	8.4	13,292	49.1
	Number of pupils	13,039,063	7,953,604	61.0	759,168	5.8	8,712,772	66.8
Lower secondary school	Number of schools	13,198	1,390	10.5	654	5.0	2,044	15.5
	Number of pupils	6,140,122	496,916	8.1	193,007	3.1	689,923	11.2
Upper secondary course of special school	Number of schools	147	75	51.0	—	—	75	51.0
	Number of pupils	8,550	5,228	61.1	—	—	5,228	61.1
Part-time upper secondary evening school	Number of schools	1,730	265	15.3	52	3.0	317	18.3
	Number of pupils	417,101	75,766	18.2	6,744	1.6	82,510	19.8
Total	Number of schools	42,147	12,757	30.3	2,971	7.0	15,728	37.3
	Number of pupils	19,604,836	8,531,514	43.5	958,919	4.9	9,490,433	48.4

REMARKS : The total number throughout Japan is as on May 1, 1960. The number of pupils includes teachers ; elementary and lower secondary schools include the elementary and lower secondary courses of special schools respectively.

SOURCE : *Development of School Health in Japan.* Japanese National Commission for UNESCO, 1962. p. 60.

APPENDIX V (a)

Curriculum of a Technical Upper Secondary School : Speciality (Electric)

	Subject		Units* total	1st year	2nd year	3rd year
	Japanese	Japanese A	9	3	3	3
COMMON	Social Studies	Social Studies Japanese History World History	9	3	3	3
	Mathematics	Mathematics I Mathematics II Mathematics III	12	6	3	3
	Science	Physics Chemistry	8	5		3
	Physical Training	Hygiene Gymnastics	9	3	1 2	1 2
	Foreign Language	English	9	3	3	3
	Arts	Fine Arts	2	2		
		Total	58	25	15	18
SPECIALITY (Electric)	Technology	Practical Exercise	11	2	6	3
		Electrical Drawing	6	1	2	3
		Electric & Magnetic Theory	7	4	3	
		Electric & Magnetic Measuring	2		2	
		Electric Machine	5		2	3
		Power Plant & Sub-Station	2		2	
		Transmission and Distribution	2			2
		Electronics	2		2	
		Application of Electric power	3			3
		Relation Law	2			2
		General Outline of Machine	2	2		
		Total	44	9	19	16
		Extra-Curricular Activities	6	2	2	2
		Sum Total	108	36	36	36

*One unit consists of 35 class hours. A class period of 50 minutes is defined as a class hour.

APPENDIX V (b)

Curriculum of a Technical Upper Secondary School : Speciality (Automobile)

	Subject		Units* total	1st year	2nd year	3rd year
	Japanese	Japanese A	9	3	3	3
COMMON	Social Studies	Social Studies	9	3		
		Japanese History			3	
		World history				3
	Mathematics	Mathematics I	12	6		
		Mathematics II			3	
		Mathematics III				3
	Science	Physics	8	5		
		Chemistry				3
	Physical Training	Hygiene	9	3	1	1
		Gymnastics			2	2
	Foreign Language	English	9	3	3	3
	Arts	Fine Arts	2	2		
	Total		58	25	15	18
SPECIALITY (Automobile)	Technology	Practical Exercise	12	3	3	6
		Mechanical Drawing	5	2	3	
		Mechanical Technology	4	2	2	
		Design of Automobile element	4		2	2
		Automobile Materials	2		2	
		Applied Mechanics	2	2		
		Strength of Materials	2	2		
		Automobile Mechanics	5		2	3
		Automobile Maintenance	2			2
		Factory Management	2			2
		Electricity	2			2
		Prime Mover	2			2
		Total	44	9	16	19
	Extra-Curricular Activities		6	2	2	2
	Sum Total		108	36	36	36

*One unit consists of 35 class hours. A class period of 50 minutes is defined as a class hour.

APPENDIX V (c)

Curriculum of a Technical Upper Secondary School : Speciality (Electrical Communication)

	Subject		Units* total	First year	2nd year	3rd year
COMMON	Japanese	Japanese A	9	3	3	3
	Social Studies	Social Studies Japanese History World History	9	3	3	3
	Mathematics	Mathematics I Mathematics II Mathematics III	12	6	3	3
	Science	Physics Chemistry	8	5		3
	Physical Training	Hygiene Gymnastics	9	3	1 2	1 2
	Foreign Language	English	9	3	3	3
	Arts	Fine Arts	2	2		
		Total	58	25	15	18
SPECIALITY (Electrical Communication)	Technology	Practical Exercise	13	2	6	5
		Electrical Drawing	6	2	2	2
		Theory of Electricity & Magnetism	7	5	2	
		Tube & Transistor Circuit	4		4	
		Theory of Transmission Line	3			3
		Transmitter & Receiver	2			2
		Electrical Machine	2		2	
		Applied High Frequency Technique	2			2
		Applied Electronics	2			2
		Mechanical Engineering	2		2	
		Law for Electrical Communication	1		1	
		Total	44	9	19	16
		Extra-Curricular Activities	6	2	2	2
		Sum Total	108	36	36	36

* One unit consists of 35 class hours. A class period of 50 minutes is defined as a class hour.

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APPENDIX V (d)

Curriculum of a Technical Upper Secondary School : Speciality (Machine)

	Subject		Units* total	First Year	2nd year	3rd year
COMMON	Japanese	Japanese A	9	3	3	3
	Social Studies	Social Studies	9	3		
		Japanese History			3	
		World History				3
	Mathematics	Mathematics I	12	6		
		Mathematics II			3	
		Mathematics III				3
	Science	Physics	8	5		
		Chemistry				3
	Physical Training	Hygiene	9		1	1
		Gymnastics		3	2	2
	Foreign Language	English	9	3	3	3
	Arts	Fine Arts	2	2		
		Total	58	25	15	18
SPECIALITY (Machine)	Technology	Practical Exercise	11	3	4	4
		Mechanical Drawing	10	2	4	4
		Mechanical Technology	5	2	2	1
		Materials	2		2	
		Design of Machine Element	4		2	2
		Applied Mechanics	2	2		
		Strength of Materials and Mechanism	3		2	1
		Prime Mover	3		3	
		Factory Management	2			2
		Electricity	2			2
		Total	44	9	19	16
		Extra-Curricular Activities	6	2	2	2
		Sum Total	108	36	36	36

* One unit consists of 35 class hours. A class period of 50 minutes is defined as a class hour.

APPENDIX VI

Enrolment in Institutions of Higher Education by Faculty, 1960-61

Faculty or Department	Universities		Graduate-School		Junior Colleges	
	Number	Percentage	Number	Percentage	Number	Percentage
Total	601,464	100.0%	15,734	100.0%	81,528	100.0%
Literature	97,008	16.1	4,614	29.3	16,41	19.8
Law, Economics, Politics & Commerce	247,319	41.1	2.983	18.9	14,622	17.9
Science	22,723	3.8	1,887	12.0	199	0.2
Engineering	92,572	15.4	1,614	10.3	9,200	11.3
Agriculture	28,040	4.7	711	4.5	1,353	1.7
Medicine, Dentistry and Pharmacy	35,633	5.0	3,849	24.5	465	0.6
Home Economics	8,203	1.4	11	0.1	30,508	37.4
Teacher Training	55,416	9.2	—	—	4,419	5.4
Others	14,550	2.4	65	0.4	4,621	5.7

NOTE : Arts students and science students in the faculty of liberal arts are included in 'Literature' and 'Science' respectively. For convenience, 'Medicine, Dentistry & Pharmacy' includes students in the nursing course and 'others' includes students in Faculties or Departments of Mercantile Marine, Physical Education and Fine Arts.

SOURCE : *Education in Japan, 1960.* Annual Report of the Ministry of Education, p. 54.

N.C.E.R.T. Publications on Audio-Visual Education

Displays and Exhibits for National Emergency by S. L. Ahluwalia

A profusely illustrated manual that discusses various aspects of arranging displays in schools. A major part of it is devoted to descriptive details of display on the Himalayas. A very useful guide to the secondary school teachers and students and audio-visual workers. Pages 28. Price 90 Paise.

Effective Use of Display Material in Schools (Reprint) by H. S. Bhola

A monograph that describes how a display board can become an indispensable medium of communication in schools. With the help of designs, it describes how pictorial and other materials can be utilized attractively and with ingenuity by teachers and outside the classroom. Pages 46. Price 55 Paise.

Film Appreciation—The Art of Five Directors by Marie Seton

A monograph that describes the fundamentals of Film Appreciation and analyzes the art of five famous directors to highlight and elucidate these fundamentals. Pages 72. Price Rs. 1.50.

Film as an Art and Film Appreciation by Marie Seton

This is the follow-up of the above monograph by Miss Seton. In this part some more practical aspects of film appreciation have been dealt with. Pages 111. Price Rs. 1.25.

A. V. Aids in Community Development by S. L. Ahluwalia & H. S. Bhola

A comprehensive illustrated manual on the use and preparation of A.V. aids for social education. Communication, whether it is through word of mouth or through pictures, must be established with understanding and feeling for the human material with which the social worker has to deal. This monograph will serve the purpose of acquainting the uninitiated with the basic principles of communication and how to make it intelligible to rural population. Pages 52. Price Rs. 1.75.

Simple Visual Aids for Social Education by S. L. Ahluwalia

A profusely illustrated manual on the use and preparation of low-cost visual aids for social education. A handy guide for village-level workers and instructors who want to make their communication more effective. Pages 24. Price 85 Paise.

Preparing Graphic Aids by S. L. Ahluwalia

A profusely illustrated brochure that gives practical hints on graphic materials, classes of aids and the elements of layout for charts, colour schemes, lettering, enlarging or reducing diagrams and planning instructional material. This will help the teacher to help himself, by understanding the simple technique of preparing instructional aids in cooperation with his pupils. Pages 28. Price Rs. 1.15.

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